

## REMARKS

At the outset, Applicants wish to thank the Examiner for indicating that the pending claims are allowable over the prior art of record.

Claims 1-17 are pending in this application. Claims 1-5, 7, 11, 13 and 17 have been amended to more particularly point out and distinctly claim the presently claimed subject matter. Claim 16 has been cancelled without prejudice or disclaimer.

In the Office Action mailed August 7, 2006 ("Office Action"), the Examiner included a copy of Applicants' previously submitted PTO-1449 form, with lines drawn through several references for allegedly containing incorrect citations. Applicants include with this Amendment an Information Disclosure Statement and corrected PTO-1449 form. Independent acknowledgement and consideration of the listed references respectfully is requested.

Applicants also include with this Response a Power of Attorney from Basell Polyolefine GmbH and Statement Under 37 CFR 3.73(b).

### **I. *Objections to the Specification***

With respect to the objection to the Abstract, Applicants have provided a new Abstract on a separate sheet as requested by the Examiner.

With respect to the objection to the coefficients on the E groups, Applicants thank the Examiner for correctly pointing out the inconsistencies in the various E groups. The specification has been amended to correct formalities noted by the Examiner. A substitute specification is submitted with this Amendment, along with markings showing all the changes. A clean version of the specification, without markings, is also included with this Amendment. As the Examiner will note, the points identified by the Examiner are believed fully addressed in the Substitute Specification.

The Substitute Specification also is accompanied by a Rule 125 (b) statement that no new matter has been introduced. See, also, MPEP §608.01(q) at 600-100, 8<sup>th</sup> Ed., Rev. 5. Reconsideration and withdrawal of the Objection to the specification respectfully are requested.

## II.

### *Claim Rejections*

A. Claims 1-17 were rejected under 35 USC§ 112, second paragraph, because, according to the Examiner:

- In claims 1, 5, 7 and 11, the proper format for a closed Markush group is e.g. --E<sub>2</sub> and E<sub>3</sub> are each CR, N or P--.
- In claim 5, below the reaction arrow for the first reaction should be “-H<sub>2</sub>O” since this is a dehydration condensation, and between the two possible products should be or”. In the second reaction arrow, the reduction step should result in hydrogen being on both E<sub>6</sub> and the adjacent carbon atom, contrary to the definitions of R<sup>5</sup> and R<sup>6</sup>.
- The term “Y” in claim 7 is used by the claim to mean “Lewis acid (sic)”, while the accepted meaning is “yttrium.” The term is indefinite because the specification does not clearly redefine the term. A different variable name should be chosen for this variable, preferably one that has no other conventional meaning in synthetic chemistry.
- In claim 7, the specification defines Y as a Lewis base, not a Lewis acid; this occurs twice in this claim. In the definition of R” above the definition of Y, insert -- or-- after “halogen” in the second line for a clear closed Markush group.
- The term “B” in claim 13 is used by the claim to mean “cocatalyst”, while the accepted meaning is “boron”. The term is indefinite because the specification does not clearly redefine the term.
- Claim 16 provides for the use of a catalyst, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass.

With respect to the rejection of claims 1-5 and 7, which relates to the coefficients of the E variable, Applicants have amended the claims to address this informality. In addition, for informalities related to the Markush group construction, appropriate correction also has been made.

In response to the rejection of claim 5 for informalities related to the reaction arrows, Applicants have corrected the designation below the reaction arrow as noted by the Examiner. However, in response to the Examiner’s contention that in claim 5 the reduction step should result in hydrogen being on both E<sub>6</sub> and adjacent carbon atom, Applicants traverse that argument.

With regard to the process recited in claim 5, the reduction step b) is explained on page 8, line 16 of the specification. Whereas a “classic” reduction with hydrogen or LiAlH<sub>4</sub> (route i) would result in E<sub>6</sub> and the adjacent carbon being substituted with H, the specification teaches

different alternatives in routes ii) and iii), which are also standard organic reactions. For example in route ii) the addition of metal alkyls is a standard reaction. (See, Attachment A, Organometallic Reagents In Synthesis, by Paul Jenkins, Oxford University Press 1992, page 14). Thus, the definitions provided by claim 5 are accurate and do not need to be amended. The rejection respectfully is requested to be withdrawn.

In response to the rejection of claim 7 for use of the term “Y” as a Lewis acid, (not a Lewis base), Applicants have amended the term to clarify that Y is a Lewis base. However, in response to the rejection of claim 7 with regard to the Examiner’s contention that the term “Y” is indefinite because one would allegedly mistake “Y” for “yttrium,” Applicants traverse the rejection.

Initially, it is not see how, on the one hand, the Examiner can readily recognize that “Y”, as the specification teaches, is a “Lewis base,” and at the same time on the other hand, contend that “Y” is confusable with “yttrium” such that one would not understand what “Y” means. With respect, such reasoning simply does not follow. Contrary to that argument, “Y” is clearly defined in claim 7 as a “Lewis base.” One could not possibly ignore that in construing that term, as a matter of fact and law, and consider that “Y” as recited in claim 7 is literally limited to “yttrium.” That should be the end of the matter, because, as was settled almost 40 years ago in *In re Moore*, 439 F.2d 1232, 1235, 169 USPQ 236, 238 (CCPA 1971), all that §112, second paragraph, requires is that the claims of a patent have a “reasonable” degree of precision:

set out and circumscribe a particular area ***with a reasonable degree of precision and particularity***. It is here where the definiteness of the language employed must be analyzed-not in a vacuum, but always in light of the teachings of the prior art and of the particular application disclosure as it would be interpreted by one possessing the ordinary level of skill in the pertinent art. (Emphasis added).

That standard is met by claim 7 here, and the Examiner has acknowledged that in the rejection. Accordingly, Applicants request the Examiner to reconsider and withdraw this objection.

Similarly, in response to the Examiner's assertion that the term "B" is indefinite, Applicants traverse the assertion. The discussion above with regard to "Y" applies with equal force to the claim recitation "component B." The Examiner admittedly recognizes that "B" is clearly defined in claim 13 as being one of a group of defined components -- "'B" in claim 13 is used to mean 'cocatalyst'". The specification expressly teaches the same. And nothing in the claims or the specification indicates in anyway that "B" should be construed to mean "boron." When the claims *reasonably apprise* one what the claims are intended to mean, that is the end of the inquiry under 35 USC § 112, second paragraph. Read in context, it is perfectly clear to one skilled in this art what is being referred to, *i.e.*, "component B," not the element boron. Accordingly, Applicants also request that the Examiner reconsider and withdraw the rejection.

Finally, with respect to the rejection of claim 16, Applicants note that claim 16 has been cancelled. Therefore, Applicants submit that this rejection is now moot. Reconsideration and withdrawal of the Objection respectfully is requested.

**B.     Response to rejection of claims 1-17 under 35 U.S.C. §112, first paragraph, as allegedly being non-enabling.**

Claims 1 - 17 were rejected under the enablement provision of 35 USC § 112, first paragraph. (Office Action, P.2, para. item no. 4). For the reasons presented below, reconsideration and withdrawal of this rejection, respectfully are solicited.

In making the rejection the Examiner acknowledged that the specification fully enabled thiazolylaminophenol ligands because the working examples in the specification employed thiazolylaminophenols. However, the Examiner asserted that the specification did not enable "anything else." Although the Examiner candidly acknowledged that the specification contained "a universe of prophetic examples in which the various E groups are various combinations of oxygen, sulfur, selenium, tellurium, imino, methylene, and phosphino groups," and that "the chemistry of these various groups is somewhat similar," according to the Examiner, it was not "identical" enough so that one could make a "simple substitution" of one group for another during the preparation of the various compounds. The Examiner then contended that

experimentation would be undue, because “the metes and bounds of the invention would not be immediately ascertainable by the routineer in the art by simply looking at the claims.”

Initially, in response, whether one can “immediately ascertain” the “metes and bounds” of the claims, is absolutely irrelevant to the enablement provision of 35 USC §112, first paragraph. To undersigned counsel’s knowledge, no case has ever stated that the test for enablement is whether one can “immediately ascertain” anything, much less the “metes and bounds” of a claim. That is not the law. Nor is it the law that, to satisfy the enablement requirement, one must be able to make “simple substitutions” within the scope of claimed components. No case has ever held that either.

Moreover, the Examiner’s acknowledgement that “the chemistry of these various groups is somewhat similar,” is in fact evidence that demonstrates that one of skill in the art, armed with the present specification - including the examples - could readily practice the claims’ requirements without having to engage in undue experimentation. The law does not require that every possible substitution from one component to another must be “identical,” or that the chemistry of all possible substitutions be “identical,” to satisfy the enablement requirement. To undersigned counsel’s knowledge, no case has ever held that either.

Because the Examiner has clearly employed the wrong legal standards in making the rejection, the rejection should be reversed for these reasons alone. Should the Examiner, however, maintain the rejection, he is hereby requested to make a showing of authority to support that his “simple substitution,” chemically “identical,” “immediately ascertainable,” and the “metes and bounds” arguments are the standard for compliance with the enablement requirement. In addition, although the fact that the wrong analysis and legal standards were employed in making the rejection mandates that the rejection should be withdrawn for those reasons alone, out of an over abundance of caution, it is demonstrated below that one would not have had to engage in undue experimentation to practice what the claims require.

As is well settled, “[a]ny assertion by the Patent Office that the enabling disclosure is not commensurate in scope with the protection sought must be supported by evidence or reasoning substantiating the doubts so expressed.” *In re Dinh-Nguyen*, 181 USPQ 46, 47 (CCPA 1974).

(Emphasis added). As demonstrated above, the arguments and alleged “evidence” advanced in support of the rejection are clearly insufficient to meet the requirements to support a rejection for lack of enablement. And as the Examiner has acknowledged, the E groups of the claims are clearly set out -- they do not say that “E can be anything.” That is what one of skill in this art would understand, and a specification is directed to those of skill in this art. *In re Gay*, 135 USPQ 311, 314 (CCPA 1962). It is not required to be a blue print or a production specification. (*Id.*, at 316) (“Not every last detail is to be described, else patent specifications would turn into production specifications, which they were never intended to be.”). “Furthermore, a patent need not teach, and preferably omits, what is well known in the art.” *Hybritech, Inc. v. Monoclonal Antibodies*, 231 USPQ 1367, 1384 (Fed. Cir. 1986).

In addition, predictability is a well established “*Wands* factor,” and the Examiner has admitted that chemistry of the E groups is at least “somewhat similar.” That is predictability. Thus, the statements in the specification, and Examiner’s acknowledgement, and the clear definitions in the claims, together refute the allegations of unpredictability and “undue” experimentation. There is no evidence to support the rejection. *In re Marzocchi*, 169 USPQ 367, 369-70 (CCPA 1971) (an Examiner must “back up” allegations of unpredictability with “acceptable evidence.”).

Finally, with regard to the Examiner’s contention that the claims are not enabled because “[t]he sole working examples of the ligands of the present invention are thiazolylaminophenols.” (*Id.*, at lines 12-13). That argument is insufficient to make out a *prima facie* case of nonenablement. As the Board stated in *Ex parte Nardi*, 229 USPQ 79, 80 (BPAI 1986):

We agree with the appellants that one of ordinary skill in the art following the correlation taught in the specification would be provided with sufficient guidance to practice the invention without undue experimentation. The fact that the specification is devoid of a working example is without significance. It is well established that examples are not necessary.

In summary, the Examiner has not advanced any evidence to support his allegation, and also has employed the wrong legal standard. The evidence of record, on the other hand, demonstrates that one of skill in this art readily recognizes and understands the scope of the transition metal complexes and the ligands upon which they are based, and would not be required

to engage in undue experimentation to practice the invention as claimed. There is no factual basis to believe that one could not practice what is claim, in view of the teachings in the specification, without undue experimentation.

In view of the information provided by the present specification, the skill in this art, the information available to one of skill in this art at the time the application was filed, and in view of the fact that the Examiner has not met his burden in the first instance, it respectfully is submitted that the rejection should be withdrawn.

C. Response to rejection of claims 6, 7, and 9-17 under 35 U.S.C. §112, first paragraph, as allegedly being non-enabling.

For the reasons presented below, reconsideration and withdrawal of the rejection, respectfully is requested.

In making the rejection, the Examiner relied on much the same arguments as discussed above, and asserted that “the specification, while being enabling for the transition metal being from group 4, does not reasonably provide enablement for the transition metal being from groups 5, 6, or the later groups of the periodic table.” The Examiner, contended that undue experimentation would be required to “ascertain the actual metes and bounds” of the claims, because the groups “would not likely be completely analogous.” (Office Action, p. 3, para. item no. 5).

As discussed above in Paragraph B, in making this rejection, the Examiner again employs an incorrect legal standard in evaluating enablement, contending that for claims to be enabled, one transition metal would have to be “completely analogous” to the other. (*Id.*, at lines 8-9). That is, again, simply not the law. And, the Examiner’s reliance on alleged lack of working examples, as discussed above, is again insufficient to fill the gaps. This art is filled with patents that have claims that recite more than one element from more than one group in the Periodic Table, and, therefore, those of skill in this art readily recognize, as does the USPTO, the interchangeability of elements of the groups recited in the claims.

Moreover, whether one can “ascertain” the “metes and bounds” of the claims, again, is absolutely irrelevant to the enablement provision of 35 USC §112, first paragraph. That is not the law. To avoid redundancy, the discussion of the standard employed in the first rejection for lack of enablement is incorporated by reference here again. However, again, should the

Examiner maintain the rejection notwithstanding all of the foregoing, he is hereby requested to make a showing of authority to support that his “completely analogous” and “ascertain actual metes and bounds” arguments are the standards for compliance with the enablement requirement.

In summary then, the Examiner has not advanced any evidence to support his allegation, and also has employed the wrong legal standard. The evidence of record, on the other hand, demonstrates that one of skill in this art readily recognizes and understands the scope of the ligands, and the transition metal complexes upon which they are based, and would not be required to engage in undue experimentation to practice the invention as claimed.

**D.     Response to rejection of claim 16 under 35 U.S.C. §101.**

In response to the Examiner’s rejection of claim 16 under 35 U.S.C. §101, Applicants have cancelled claim 16, thereby rendering this rejection moot. Accordingly, Applicants kindly request that the Examiner reconsider and withdraw the rejection.

In view of all of the foregoing, Applicants respectfully request that a timely Notice of Allowance be issued in this case. Should the Examiner have questions or comments regarding this application or this Amendment, Applicant’s attorney would welcome the opportunity to discuss the case with the Examiner.

The Commissioner is hereby authorized to charge U.S. PTO Deposit Account 08-2336 in the amount of any fee required for consideration of this Amendment.



This is intended to be a complete response to the Office Action mailed August 7, 2006.

Respectfully submitted,

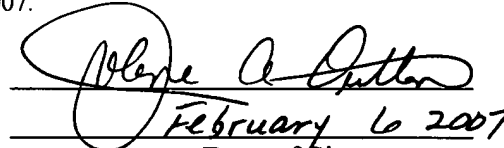


William R. Reid

Registration No. 47,894

Attorney for Applicant

I hereby certify that this correspondence is being deposited with sufficient postage thereon with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on February 6, 2007.

  
February 6 2007  
Date of Signature

Basell USA Inc.  
912 Appleton Road  
Elkton, MD 21921  
Attorney's Telephone No.: 410-996-1783  
Attorney's Fax No.: 410-996-1560

**ATTACHMENT A**

# Organometallic Reagents in Synthesis

**Paul R. Jenkins**

Department of Chemistry, University of Leicester

BEST AVAILABLE COPY

OXFORD NEW YORK TOKYO  
OXFORD UNIVERSITY PRESS  
1992

*Oxford University Press, Walton Street, Oxford OX2 6DP*

*Oxford New York Toronto  
Delhi Bombay Calcutta Madras Karachi  
Petaling Jaya Singapore Hong Kong Tokyo  
Nairobi Dar es Salaam Cape Town  
Melbourne Auckland*

*and associated companies in  
Berlin Ibadan*

*Oxford is a trademark of Oxford University Press*

*Published in the United States  
by Oxford University Press, New York*

*© Paul R. Jenkins, 1992*

*All rights reserved. No part of this publication may be reproduced,  
stored in a retrieval system, or transmitted in any form or by any means,  
electronic, mechanical, photocopying, recording, or otherwise, without  
the prior permission of Oxford University Press*

*This book is sold subject to the condition that it shall not, by way  
of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated  
without the publisher's prior consent in any form of binding or cover  
other than that in which it is published and without a similar condition  
including this condition being imposed on the subsequent purchaser*

*A catalogue record for this book is available from the British Library*

*Library of Congress Cataloging in Publication Data*

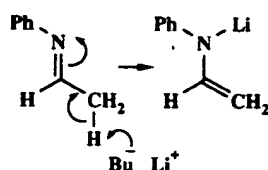
*(Data available)*

*ISBN 0-19-855667-5 (Hbk)*

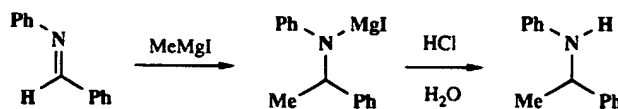
*ISBN 0-19-855666-7 (Pbk)*

*Typeset by Pentacor Ltd., High Wycombe, Bucks  
Printed in Great Britain by Information Press Ltd., Oxford*

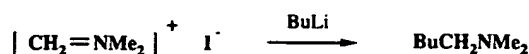
**BEST AVAILABLE COPY**

**Addition of metallated alkanes to imines, nitriles, and isonitriles**

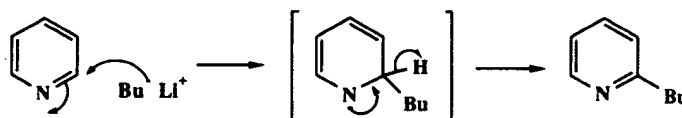
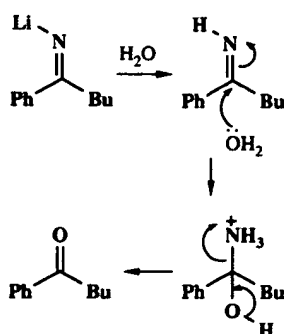
Lithium and magnesium reagents add to imines, but deprotonation at the  $\alpha$ -carbon is a major side reaction. Best results are obtained when there are no  $\alpha$ -protons (Equation 1.11).



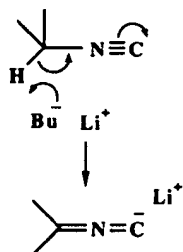
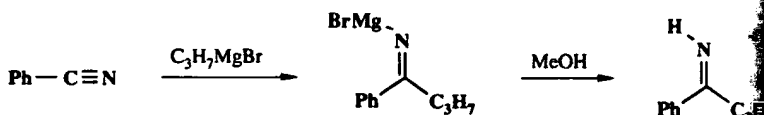
Iminium salts react with lithium reagents to give amines, the iminium salt in Equation 1.12 was invented by the Swiss chemist Albert Eschenmoser (Equation 1.12).



When the imine bond is part of a heterocyclic compound addition occurs: the reaction occurs best with organolithium reagents as they are more nucleophilic. The initially formed addition compound is sometimes isolated but it normally collapses to the aromatic ring as a by loss of hydride in an oxidation step which normally occurs spontaneously in air during work up (Equation 1.13).



Nitriles react with lithium and magnesium reagents by nucleophilic addition. The intermediate imines are sometimes isolated but are often hydrolysed to the corresponding ketone. This sequence provides a useful method for the synthesis of ketones and there is a vast number of successful examples (Equation 1.14).



Isonitriles undergo nucleophilic addition with organolithium reagents to give lithioimines which react in turn with electrophiles to give derivatives which may be hydrolysed to carbonyl compounds (Scheme 1.2). The reactions do not work well where there is a proton  $\alpha$  to nitrogen as deprotonation is a major side reaction.